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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/240,275

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7590

04/29/2005

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EXAMINER

KIM, KEVIN

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 04/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/240,275

Applicant(s)

BERGER ET AL

Examiner

Kevin Y. Kim

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1-28-2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6,8-16,18-20 is/are allowed.
- 6) ☒ Claim(s) 7 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on January 29, 2005 have been fully considered but they are not persuasive.

Applicant traverses the rejection of claims 7 and 17 by arguing that the prior art, the Iwamatus patent, fails to teach "determining the actual distance between said received signals and said reference constellation" in that the patent teaches finding the difference between an average signal point and a received point. However, the only disclosure supporting the limitation is shown in Figs.4-7 which shows determining the distance between constellation points such as "-A," "+A," "-C" and "+B" which are nothing but the average of received signals. Thus, the Iwamatus patent teaches the limitation of determining the actual distance between said received signals and said reference constellation when it discloses calculating the difference between the average signal point and a reference constellation point.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 7 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamatsu et al (US 6,487,261, previously cited) in view of Sotome et al (US 5,761,216 previously cited).

Iwamatsu et al discloses a method of demodulating a signal, comprising the steps of;

a) receiving modulated (QAM) signals, see Fig.4, Reception stage,

b) storing a reference constellation, see Memory 221 in Fig.14, and col. 13, lines 19-21

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- c) determining the actual distance between said received signals and the reference constellation, see Fig. 15, and col. 12, lines 58-61,
- d) adjusting the location of the reference constellation as a function of said actual distance, defining an adjusted reference constellation, see col. 12, line 61 ~ col.13, line 17,
- e) storing the adjusted reference constellation, see col. 13, lines 19-21,
- f) decoding the signals relative to the adjusted reference constellation, see the Decision circuit 222 in Fig.14.

Iwamatsu et al, however, fails to disclose “providing a symbol error counter for comparing said decoded signals to a predetermined training sequence to further improve the bit error rate.” Sotome et al teaches an error counter that counts errors by comparing a signal to be measured with a reference pattern for the purpose of measuring bit error. See Fig.18A. Thus, it would have been obvious to one skilled in the art at the time the invention was made to add an error counter such as taught by Sotome et al to the decoder stage of Iwamatsu et al for the purpose of measuring bit error rate, which is needed to measure communication channel and to improve communication.

Allowable Subject Matter

3. Claims 1-6,8-16,18-20 are allowed.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kvk


CHIEH M. FAN
PRIMARY EXAMINER